

Patents and Selected Publications and Presentations

Patents

Pyroprocess for Processing Spent Nuclear Fuel

W. E. Miller and Z. Tomczuk

Patent No. 6,461,576, issued October 8, 2002

Direct Electrochemical Reduction of Metal-Oxides

L. Redey and K. Gourishankar

Patent No. 6, 540, 902, issued April 1, 2003

Journal Articles, Books, and Book Chapters

Phonon Dispersion in Uranium Measured Using Inelastic X-Ray Scattering

M. E. Manley, G. H. Lander, H. Sinn, A. Alatas, W. L. Hults, R. J. McQueeney, J. L. Smith, and J. Willit

Phys. Rev. B 67, 052302-1 through 052302-4 (2003)

Interfacial Reactions of Zirconium and Zirconium-Alloy Liquid Metals with Beryllia at Elevated Temperatures

S. M. McDeavitt, G. W. Billings, and J. E. Indacochea

J. Mater. Sci. **37**, 3765–3776 (2002)

High Temperature Interaction Behavior at Liquid Metal-Ceramic Interfaces

S. M. McDeavitt, G. W. Billings, and J. E. Indacochea

J. Mater. Eng. Perform. **11**, 392–401 (2002)

Abstracts and Proceedings Papers

Decomposition Voltages of Metal Chlorides for the Separation of U and Pu from Lanthanide Fission Products in Molten Salt

R. J. Finch, W. E. Miller, S. M. McDeavitt, J. M. Runge, L. Leibowitz, and M. A. Williamson

Presented at 27th Actinide Separations Conference, Argonne, IL, June 9-12, 2003

PYROX—Pyrochemical Treatment of Spent Light Water Reactor Oxide Fuel

M. A. Williamson

Abstract, presented at 27th Actinide Separations Conference, Argonne National Laboratory, Argonne, IL, June 9-12, 2003

Efficiency Improvements and Scale-Up for Uranium Electrowinning

J. L. Willit, R. J. Blaskovitz, and J. Figueroa

Abstract, presented at 27th Actinides Separations Conference, Argonne National Laboratory, Argonne, IL, June 9-12, 2003

Papers Presented at Scientific Meetings

PYROX Process Development

Mark A. Williamson

Presented at the Advanced Fuel Cycle Initiative Semi-Annual Review, Albuquerque, NM, January 21-24, 2003.

Advanced Pyroprocessing Technology

Mark A. Williamson

Presented at the Advanced Fuel Cycle Initiative Semi-Annual Review, Santa Fe, NM, August 26-28, 2003.

Precursor Selection for Chemical Vapor Deposition of Niobium on Zirconia Microspheres

C. T. Snyder, J. M. Runge, T. C. Carter, A. S. Hebden, B. Campbell, and S. M. McDeavitt

Presented at the TMS Annual Meeting, San Diego, CA, March 2-6, 2003

Preparation of Uranium Chloride

A. A. Frigo, L. S. Chow, J. K. Basco, J. L. Willit, and W. E. Miller

Presented at 27th Actinide Separations Conference, Argonne, IL, June 9-12, 2003

Efficiency Improvements and Scale-up for Uranium Electrowinning

J. L. Willit, R. J. Blaskovitz, and J. Figueroa

Presented at 27th Actinide Separations Conference, Argonne National Laboratory, Argonne, IL, June 9-12, 2003

A Glovebox System for Handling Materials that Emit Low-Penetrating Ionizing Radiation

A. A. Frigo

Presented at 2003 American Glovebox Society Standards Development Committee and Outreach Meeting, Oak Ridge, TN, May 7, 2003

An In-Situ, Real-Time XANES and EXAFS Characterization of Noble Metal Catalyst Perovskite Liquid Metal Interactions on Ceramic Surfaces in Advanced Nuclear Energy Applications

S. M. McDeavitt, J. M. Runge, L. Leibowitz, J. E. Indacochea, and L. A. Barnes

Presented at ICONE 11, Eleventh International Conference on Nuclear Engineering, Tokyo, Japan, April 20-23, 2003

Electrochemical Investigation of the Uranium Exchange Current Density in LiCl-KCl Eutectic

V. Goss, K. V. Gourishankar, and J. L. Willit

Presented at the 132nd TMS Annual Meeting and Exhibition, San Diego, CA, March 2-6, 2003

Electrochemical Reduction of Spent Oxide Fuel

K. V. Gourishankar, L. Redey, and D. J. Graziano

Presented at the 132nd TMS Annual Meeting and Exhibition, San Diego, CA, March 2-6, 2003

Cermet Nuclear Fuel Fabrication by Powder Metallurgy Methods

S. M. McDeavitt, M. C. Hash, A. S. Hebden, J. M. Runge, C. T. Snyder, and A. A. Solomon

Presented at the 132nd TMS Annual Meeting and Exhibition, San Diego, CA,
March 2–6, 2003

Pyrochemical Separations of TRU and Fission Product Content from Metal Alloy Fuels

M. K. Richmann, W. E. Miller, Z. Tomczuk, and D. J. Graziano

Presented at the 132nd Annual Meeting and Exhibition, San Diego, CA, March 2–6, 2003

Recent Advances in Uranium High Throughput Electrorefining

J. L. Willit, G. A. Fletcher, R. J. Blaskovitz, J. Figueroa, and M. A. Williamson

Presented at the 132nd TMS Annual Meeting and Exhibition, San Diego, CA, March 2–6, 2003

Interfacial Aspects of Ceramic-Metal Brazing

S. M. McDeavitt, J. E. Indacochea, and G. W. Billings

Presented at the AWS-ASM Int. IBSC Brazing and Soldering Conf., San Diego, CA,
February 17–19, 2003

Neptunium Substitution into the Structure of Alpha-U₃O₈

R. J. Finch and A. J. Kropf

Presented at the Mater. Res. Soc. Fall 2002 National Meeting, Boston, MA, December 2–6, 2002

The Role of Interfaces in Ceramic-Metal Bonding

S. M. McDeavitt, G. W. Billings, and J. E. Indacochea

Presented at ASM International Materials Solutions 2002, International Conference on
Joining of Advanced and Specialty Materials 5, Columbus, OH, October 8-9, 2003

Low-Temperature Powder Metallurgy Method for the Fabrication of Cermet Inert Matrix Fuels

S. M. McDeavitt, M. C. Hash, T. J. Downar, A. A. Solomon, A. S. Hebden, J. M. Runge,

C. T. Snyder, and L. A. Barnes

Presented at the Inert Matrix Fuel 8th Meeting, JAERI Tokai, Ibaraki, Japan, October 16–18, 2002